

**TECHNICAL REVIEW DOCUMENT**  
**For**  
**RENEWAL /MODIFICATION of OPERATING PERMIT 05OPWE279**

Public Service Company of Colorado – Rocky Mountain Energy Center  
Weld County  
Source ID 1231342

Prepared by Jacqueline Joyce  
August and September 2011  
Revised December 2011, February and March 2012

This document was revised May 24, 2012 to address a change made to the General Conditions (Section V of the permit) prior to permit issuance. This change would qualify as an administrative amendment. The May 24, 2012 revisions are specifically noted as such in this document.

**I. Purpose:**

This document will establish the basis for decisions made regarding the applicable requirements, emission factors, monitoring plan and compliance status of emission units covered by the renewed operating permit proposed for this site. The original Operating Permit was issued July 1, 2007. The expiration date for the permit is July 1, 2012. The source submitted a renewal application on May 10, 2011. Prior to and after submittal of the renewal application, the source submitted applications on December 20, 2010, March 23 and September 16, 2011 to modify the permit for this facility.

The December 20, 2010 submittal indicated that Public Service Company of Colorado (PSCo) purchased Rocky Mountain Energy Center, LLC and its assets from Calpine Operating Services Corporation and PSCo subsequently dissolved Rocky Mountain Energy Center, LLC. The December 20, 2010 submittal also requested an administrative amendment to revise the permit to reflect the change in ownership of the facility.

The March 23, 2011 application requests a minor modification of the permit to update the list of insignificant activities in Appendix A and to include a cold cleaner solvent vat and a 500 gallon gasoline storage tank in Section II of the permit. The September 14, 2011 application requests a minor modification of the permit to address the operational status of the boiler.

This document is designed for reference during the review of the proposed permit by the EPA, the public, and other interested parties. The conclusions made in this report are based on information provided in the renewal application submitted on May 10, 2011, modification applications submitted on December 20, 2010, March 23 and September 16, 2011, comments on the draft permit and technical review document received on February 6, 2012, comments on the draft permit received on March 23, 2012

during the public comment period, previous inspection reports and various e-mail correspondence, as well as telephone conversations with the applicant. Please note that copies of the Technical Review Document for the original permit and any Technical Review Documents associated with subsequent modifications of the original Operating Permit may be found in the Division files as well as on the Division website at <http://www.cdphe.state.co.us/ap/Titlev.html>.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised construction permit.

## **II. Description of Source**

The facility consists of two natural gas fired combustion turbines, two heat recovery steam generators (HRSG), each equipped with natural gas fired duct burners, a steam turbine, cooling tower and auxiliary boiler. There are two diesel fired engines, one driving an emergency generator and one driving a fire pump. There is also a cold cleaner solvent vat and a gasoline storage tank that are included in Section II of the permit. The RMEC has the capacity to generate up to 630 MW of electricity. Each combustion turbine can generate approximately 152 MW, with an additional 326 MW (at peak capacity) from the steam turbine. The turbines are not equipped with a by-pass stack, therefore, the turbines only operate in combined cycle mode (i.e. turbine plus HRSG).

The facility is located at 6211 Weld County Road 51, just east of the town of Hudson, in Weld County Colorado (bounded by CR 49 to the west, CR 16 to the north and CR 51 to the east). The area in which the plant operates is designated as attainment for all criteria pollutants except ozone. It is classified as non-attainment for ozone and is part of the 8-hr Ozone Control Area as defined in Regulation No. 7, Section II.A.1.

There are no affected states within 50 miles of this facility. Rocky Mountain National Park, a federal class I designated area is within 100 km of this facility.

Based on the information provided in the renewal application, no changes have been made to any of the significant emission units.

The summary of emissions that was presented in the Technical Review Document (TRD) for the original permit has been reproduced here. Since there have been no changes to permitted emission and/or fuel consumption limitations and no new emission

units have been added to the facility, the potential to emit (PTE) has not changed. Potential emissions (in tons per year) at the facility are as follows:

Emission Unit	Potential To Emit						
	PM	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	HAPS
Turbines/HRSGs	126.8	126.8	11.8	240.4	782.2	50.6	See Table on Page 16
Aux. Boiler <sup>1</sup>	2.28	2.28	0.07	4.7	4.75	0.64	
Emergency Generator <sup>2</sup>	0.40	0.40	0.16	6.88	8.48	1.00	
Fire Water Pump <sup>3</sup>	0.02	0.02	0.02	0.60	0.36	0.07	
Cooling Tower <sup>4</sup>	19.3	19.3				0.89	
Total	148.8	148.8	12.06	252.58	795.79	53.20	13.01

<sup>1</sup>SO<sub>2</sub> and VOC emissions are based on the permitted fuel limit and AP-42 emissions factors (Section 1.4, dated 3/98, Table 1.4-2).

<sup>2</sup>Emissions based on 500 hours/year of operation (per September 6, 1995 EPA Memo, "Calculating Potential to Emit (PTE) for Emergency Generators"), maximum hp and for all but SO<sub>2</sub> manufacturer's emission factors, SO<sub>2</sub> based on sulfur content of 0.05 wt % (fuel density 7.05 lb/gal).

<sup>3</sup>Emissions based on 500 hours/year of operation, maximum hp and for all but SO<sub>2</sub> manufacturer's emission factors, SO<sub>2</sub> based on sulfur content of 0.05 wt % (fuel density 7.05 lb/gal). 500 hours per year of operation was used in accordance with EPA's September 6, 1995 memo. Although that memo addresses emergency generators only, the Division considers the memo is appropriate to use for emergency fire pump engines.

<sup>4</sup>VOC emissions are based on the permitted water circulation rate and the emission factor from "Locating and Estimating Air Emissions from Sources of Chloroform", EPA-450/4-84-007c, March 1984, for re-circulating units. All VOC is chloroform.

Except as indicated in the footnotes in the above table, the potential to emit of criteria pollutants and total HAPs is based on permitted emission limits.

In general, actual emissions have not been reported for the emission units at this facility and fees have generally been paid on potential to emit. However, PSCo reported actual emissions for the turbine/HRSGs for calendar year 2010. Actual emissions from the turbine HRSGs are shown in the table below:

Emission Unit	PM	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	HAPS
CT-01	5.6	5.6	3.5	40.5	14.6	4.08	2.78
CT-02	5.4	5.4	3.2	40	11.9	0.8	2.49
Total	11	11	6.7	80.5	26.5	4.88	5.27

The breakdown of HAP emissions by emission unit and individual HAP is provided on page 16 of this document. The method of estimating HAP emissions is indicated in the footnotes on this table.

## MACT Requirements

Although the facility is not a major source for HAPS, the EPA has been promulgating rules for area sources (sources that are not major), those requirements that could potentially apply to this facility are discussed below:

### Paint Stripping and Miscellaneous Surface Coating at Area Sources (40 CFR Part 63 Subpart HHHHHH)

The final rules for paint stripping and miscellaneous surface coating were published in the Federal Register on January 9, 2008 and apply to area sources that perform paint stripping operations using methylene chloride, spray application of coatings to motor vehicles and mobile equipment and spray application of coatings that contain the target HAPS (chromium, lead, manganese, nickel or cadmium). As indicated in 40 CFR Part 63 § 63.11170(a)(2) and (3), spray applications (to motor vehicles and using coatings that contain the target HAPS) that meet the definition of facility maintenance are not subject to the requirements in this rule. The Division considers that any spray coatings of motor vehicles and mobile equipment and spray application of coatings that contain the target HAP at this facility would meet the definition of facility maintenance. The source indicated that none of the paint stripping chemicals used at the facility contain methylene chloride; therefore, the provisions in 40 CFR Part 63 Subpart HHHHHH do not apply.

### Reciprocating Internal Combustion Engines (RICE) (40 CFR Part 63 Subpart ZZZZ)

Final revisions to the RICE MACT were published in the Federal Register on March 3, 2010 and these revisions address existing (commenced construction prior to June 12, 2006) compression ignition engines at area sources. An emergency generator is included in Section II of the permit and the insignificant activity list indicates that there is a diesel-fired engine driving a fire pump at the facility. Both engines are considered emergency engines. Since the equipment at this facility commenced operation in March 2004, these engines are considered existing engines and are subject to requirements in MACT ZZZZ. Since the engines are considered emergency engines they are only subject to management standards (oil and filter change and inspect air cleaners, hoses and belts). The source is required to comply with these requirements by May 3, 2013. The appropriate applicable requirements will be included in the permit.

### Industrial, Commercial and Institutional Boilers at Area Sources (40 CFR Part 63 Subpart JJJJJJ)

EPA promulgated National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers on March 21, 2011. Unlike the Boiler MACT for major source (40 CFR Part 63 Subpart DDDDD), this rule only applies to boilers, not process heaters. In addition, in accordance with § 63.11195(e)

gas fired boilers are not subject to the requirements in 40 CFR Part 63 Subpart JJJJJJ. Therefore, these requirements do not apply to the equipment at this facility.

#### Compliance Assurance Monitoring (CAM) Applicability

CAM applies to any emission unit that is subject to an emission limitation, uses a control device to achieve compliance with that emission limitation and has potential pre-control emissions greater than major source levels. CAM typically applies during renewal, except in situations where controlled emissions are above the major source level and the initial Title V application was submitted after April 20, 1998. Since the initial Title V permit application was submitted on March 14, 2005 and controlled emissions of NO<sub>x</sub> and CO were over the major source level, CAM was included in the initial Title V permit with respect to those pollutants. No revisions to CAM for NO<sub>x</sub> and CO are necessary. However, since the oxidation catalyst control VOC emissions, as well as CO emissions, and uncontrolled emissions of VOC exceed the major source level, CAM also applies to the turbines with respect to VOC emissions. Therefore, CAM with respect to VOC emissions must be addressed in the renewal permit.

#### Greenhouse Gases

The potential to emit of greenhouse gases from this facility exceeds 100,000 tons/yr CO<sub>2</sub>e. Future modifications at this facility will have to be evaluated to determine if GHG emissions are subject to regulation.

### **III. Discussion of Modifications Made**

#### **Source Requested Modifications**

##### **December 20, 2010 Administrative Amendment**

The December 20, 2010 modification request was to reflect that PSCo purchased Rocky Mountain Energy Center, LLC from Calpine Operating Services Corporation. As specified in Colorado Regulation No. 3, Part A, Section I.B.1.a.(iv) a transfer of ownership is considered an administrative amendment.

The following revisions were made to address the December 20, 2010 modification request:

- PSCo was indicated as the owner on the page following the cover page, the headers and footers and in Appendices B and C.
- Section I, Condition 1.3 was revised to indicate that the construction permit was formerly issued to Rocky Mountain Energy Center, LLC.
- The responsible official and permit contacts were revised (page following cover page) and the designated representative and the alternate designated representative (Section III) were revised.

## **March 23, 2011 Minor Modification**

In the March 23, 2011 minor modification application PSCo identified equipment at the facility that is not included in the current permit. All the equipment that is not identified in the current permit is exempt from both APEN reporting and construction permit requirements and as a result most of the requested changes are to the insignificant activity list in Appendix A of the permit. The Division considers that changes to the permit to update the insignificant activity list may be processed as an administrative amendment, since the appendices are intended for information purposes only and are not considered state or federally enforceable.

In accordance with the “catch-all” in Colorado Regulation No. 3, Part C, Section II.E, sources that are subject to any federal or state applicable requirements such as National Emission Standards for Hazardous Air Pollutants (NESHAP) or Colorado Regulation No. 7 cannot be considered insignificant activities. Since the cold cleaner solvent vat and the gasoline storage tank are subject to requirements in Colorado Regulation No. 7 and 40 CFR Part 63, Subpart CCCCCC, respectively, they cannot be considered insignificant activities.

Colorado Regulation No. 3, Part C, Section X.A identifies those modifications that can be processed under the minor permit modification procedures. Specifically, minor permit modifications “are not otherwise required by the Division to be processed as a significant modification” (Colorado Regulation No. 3, Part C, Section X.A.6). The Division requires that “any change that causes a significant increase in emissions” be processed as a significant modification (Colorado Regulation No. 3, Part C, Section I.A.7.a). Since both of these emission units have emissions below the APEN de minimis level (1 ton/year of VOC), they do not cause a “significant increase in emissions” and the modification to incorporate the cold cleaner solvent vat and gasoline storage tank can be processed as a minor modification.

Colorado Regulation No. 3, Part C, Section I.A.7.b specifies that “any change that is considered a modification under Title I of the Federal Act” be processed as a significant permit modification. Colorado Regulation No. 3, Part G, Section I.L (revisions adopted July 15, 1993, Subsection I.G for modifications) describes more specifically what constitutes a modification under Title I of the Federal Act and Part G indicates that a modification which triggers 112 requirements (e.g. NESHAP requirements, such as maximum achievable control technology (MACT) requirements for major sources and generally achievable control technology (GACT) requirements for area sources) is considered a Title I modification. Since the gasoline storage tank has a monthly throughput less than 10,000 gallons it is subject to work practice requirements. In accordance with Division policy (PS Memo 99-06, revised February 27, 2008) the Division considers that public comment would not be required for area sources that are subject to non-substantive MACT requirements, such as recordkeeping or work practice requirements. Therefore, since public comment would not be required if this gasoline storage tank were processed as a construction permit and because the GACT requirements are not substantive (i.e. not an emission limitation, control requirement or

design restriction), the Division considers that incorporating these provisions for the gasoline storage tank into the Title V permit qualifies as a minor modification.

The following changes were made to the permit to address the March 23, 2011 modification request:

- The insignificant activity list in Appendix A was revised as requested, except that the category for the condensate tank was revised to Reg 3, Part C, Section II.E.3.fff.

Note that unlike the 500 gallon gasoline storage tank, the 100 gal portable gasoline storage tank is not subject to the requirements in 40 CFR Part 63 Subpart CCCCCC (National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities). Subpart CCCCCC defines a gasoline dispensing facility as “any stationary facility which dispenses gasoline into the fuel tank of a motor vehicle, motor vehicle engine, nonroad vehicle, or nonroad engine, including a nonroad vehicle or nonroad engine used solely for competition.” Since the tank is mounted in the back of a facility vehicle, it is not considered stationary and therefore is not subject to the requirements in Subpart CCCCCC.

- The 500 gallon gasoline storage tank and the cold cleaner solvent vat were included in the tables in Section I, Condition 6.1 and Appendices B and C.
- Provisions for the gasoline storage tank and the cold cleaner solvent vat were included in “new” Section II.7 and II.8, respectively.

### **May 20, 2011 Renewal Application**

The source did not request any specific changes to the permit as part of the renewal but did address CAM as it applies to VOC emissions from the turbine/HRSGs. The current permit only addresses CAM with respect to the NO<sub>x</sub> and CO emission limitations. The source proposed the use of CO as a surrogate indicator for VOC emissions as CAM. Since the oxidation catalyst reduces both CO and VOC emissions and since CO emissions are continuously monitored, the Division considers that CO is an appropriate indicator to monitor in order to assess whether the control device is operating properly. With respect to the VOC emissions limitations, exceedances of the short-term and annual CO emission limitations shall be indicators that the oxidation catalyst is not functioning properly and shall be reported as excursions.

The permit was revised as follows to address the CAM requirements for VOC:

- Condition 1.13.1 was revised and reformatted to indicate that CAM applies with respect to VOC emissions and to identify excursions with respect to the VOC emission limitations.

Note that the current permit does not include a CAM plan since CAM for CO and NO<sub>x</sub> relies on the CEMS and measures direct compliance with those emission limitations. 40 CFR Part 64 § 64.3(d)(2) specifies that CEMS that meet the requirements of 40 CFR Part 60 § 60.13 and Appendix D and 40 CFR Part 75 shall be deemed to satisfy the general design criteria in 40 CFR Part 64 § 64.3(a) and (b); therefore, a CAM plan was not included. Since the indicator for VOC is the CO emission limitations, which are monitored by the CO CEMS, for the same reason a CAM plan is not included in the permit for CAM with respect to the VOC emission limitations.

### **September 16, 2011 Minor Modification**

In their September 16, 2011 modification application, PSCo indicated that the Rentech boiler has not been operated since 2006 due to severe boiler tube damage. PSCo is unsure at this point with respect to future operation of the boiler and does not currently plan to repair and return the boiler to service. The current permit requires that a performance test be conducted on the boiler within the last 18 months of the permit term to monitor compliance with the CO BACT limit. PSCo has requested that the performance test for this boiler be triggered upon the re-start of the boiler and that future performance tests be based on the actual operation of the boiler rather than a set time period.

Colorado Regulation No. 3, Part C, Section X.A.2 specifies that minor permit modifications may be used for modifications that do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in a permit. The Division considers that since the request is not a change in the frequency of performance testing but a change to the date by which the performance tests are to be conducted, it is not a significant change in existing monitoring. Therefore, the Division agrees that this modification can be processed as a minor modification.

The following changes were made to the permit to address the September 16, 2011 modification request:

- Condition 3.4.1.2 was revised to specify that the performance test be conducted within 60 days of re-starting the boiler and that testing thereafter will be based on hours of operation.

### **February 6, 2012 Comments on the Draft Permit and Technical Review Document**

In their February 6, 2012 comments on the draft permit and technical review document, the draft permit, the source requested the following changes:

#### **Section II.1 - Turbines**

The source requested that alternative NO<sub>x</sub> and CO BACT limits be included in the permit for periods of combustion tuning and testing. The Division has generally included alternative BACT and/or RACT limits during periods of combustion tuning and



testing for other turbines. The alternative BACT and/or RACT limits have typically been set at the alternative startup/shutdown limits, with limitations on the number of hours that these limits can be utilized. In their February 6, 2012 comments, PSCo asked that the alternative limits for combustion tuning and testing be limited to 60 hours per calendar year for both units combined. The permit was revised to include combustion tuning and testing limits for these units with the limits set at the level of the startup and shutdown BACT limits. The averaging time for the combustion tuning and testing will be set at an hourly average.

### Section II.3 – Auxiliary Boiler

In their September 16, 2011 modification application, the source requested that a performance test be conducted within “sixty (60) days of re-starting the boiler”. In their comments on the draft permit, PSCo requested that this language be revised to specify “boiler operating days” to address the situation when the repairs to the boiler do not succeed and repairs extend beyond 60 days. The permit language was revised as requested.

### Section II.6 – Continuous Emissions Monitoring Requirements

- PSCo requested that the RATA frequency for the CO CEMS (Condition 6.1.1.2.c) be revised to specify 40 CFR Part 60 Appendix F, rather than 40 CFR Part 75 Appendix B. This change was made as requested.
- PSCo requested that the QA/QC plan requirements for the CO CEMS (Condition 6.1.2.2) be based on 40 CFR Part 75, Appendix B, rather than 40 CFR Part 60, Appendix F. This change has been made as requested. In addition, the Division removed the phrase regarding CGA testing as this is addressed in 40 CFR Part 75, Appendix B.

### Other Modifications

In addition to the modifications requested by the source, the Division has included changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this renewal.

The Division has made the following revisions, based on recent internal permit processing decisions and EPA comments, to the Rocky Mountain Energy Center Renewal Operating Permit with the source’s requested modifications. These changes are as follows:

### Page Following Cover Page

- The monitoring and compliance periods and report and certification due dates are shown as examples. The appropriate monitoring and compliance periods

and report and certification due dates will be filled in after permit issuance and will be based on permit issuance date. Note that the source may request to keep the same monitoring and compliance periods and report and certification due dates as were provided in the original permit. However, it should be noted that with this option, depending on the permit issuance date, the first monitoring period and compliance period may be short (i.e. less than 6 months and less than 1 year).

## Section I – General Activities and Summary

- Revised the language in Condition 1.1 to address attainment status of the area in which the facility is located and corrected the citation for the definition of 8-hr ozone control area.
- May 24, 2012 revision: Condition 1.4 was revised to remove Section IV, Condition 3.d as a state-only requirement, since EPA approved these provisions into Colorado's SIP effective October 6, 2008.
- Made minor revisions to the language in Condition 3 (prevention of significant deterioration) to be more consistent with other permits. In addition, revised this condition to address the attainment status of the area in which the facility is located.
- Removed the third column labeled "Facility ID" from the Table in Condition 6.1. The first column was relabeled "Emission Unit No./Facility ID"
- Added a column to the Table in Condition 6.1 for the startup date of the equipment. In addition, the diesel-fired fire pump engine was included in the table.

## Section II.1 – Turbines

- Revised the stack test requirement in Condition 1.2.2.2 to specify that performance tests be conducted every five years, rather than within 18 months of expiration of the permit term as this provides a more definitive time frame for the tests.

The current permit requires a stack test within the last 18 months of the permit term to monitor compliance with the PM BACT limit. Testing was conducted on September 9, 2011 for Unit 1 (CT-01) and September 8, 2011 for Unit 2 (CT-02). The average test results for Unit 1 were 0.00361 lb/MMBtu and 0.00449 lb/MMBtu for Unit 2, which is 49 and 61% of the standard respectively. Frequency of tests hereafter will be every five years.

- Revised Condition 1.2.1 to include the PM and PM<sub>10</sub> emission factors from the most recent performance test.

- Revised the monitoring language for the NO<sub>x</sub> and CO BACT limits (Conditions 1.5.1.5, 1.5.1.6, 1.6.1.5 and 1.6.1.6) to indicate that replaced and bias-adjusted data are not used in assessing compliance with BACT limits.
- Revised the monitoring language for the NO<sub>x</sub> and CO annual emission limitations (Condition 1.5.2 and 1.6.2) to specify how lbs/hr emission rates are calculated and to indicate that replaced data is used to assess compliance with the annual limitations.

## Section II.2 – Emergency Compression Ignition Engines

### Emergency Generator

As discussed previously, with the March 3, 2010 revisions to the RICE MACT (40 CFR Part 63 Subpart ZZZZ), the emergency generator is subject to requirements under the RICE MACT. Therefore, the following revisions were made:

- Added the appropriate 40 CFR Part 63 Subpart ZZZZ requirements – management practices (oil and filter change, inspect air cleaner and inspect hoses and belts).
- Added the appropriate 40 CFR Part 63 Subpart A requirements

Since this engine is not subject to any emission limitations, monitoring requirements, notification and reporting requirements the requirements in §§ 63.7, 63.8, 63.9 and 63.10 do not apply. In addition, since this emission unit is an existing unit the requirements in § 63.5 (preconstruction review and notification requirements) do not apply. Finally, Table 8 of Subpart ZZZZ indicates that operation and maintenance requirements in 63.6(e) do not apply. Therefore, the permit will only include the prohibition and circumvention requirements in § 63.4.

The following additional changes were made to the permit conditions related to this engine:

- The fuel sampling requirement (Condition 2.4) was removed. The purpose of the fuel analyses was to determine the sulfur content of the fuel. Based on the AP-42 emission factor for SO<sub>2</sub> emissions noted in the current permit, compliance with the Reg 1 SO<sub>2</sub> limit is met as long as the fuel sulfur is below 0.79 weight percent (the current permit indicates 0.5 weight percent, but at that sulfur content SO<sub>2</sub> emissions are 0.505 lb/mmBtu, well below the 0.8 lb/mmBtu limit). However, since diesel fuel with a sulfur content at or above 0.79 weight percent is not available, the Division considers that the fuel sampling requirement is not necessary.
- The Division included the Reg 1 30% opacity limit in the permit. The opacity limit applies during certain special conditions and in the technical review document for

the original permit (issued July 1, 2007), the Division considered that none of those special conditions apply. Although the Division considers that startup may be short (i.e. less than 6 minutes) and thus the 30% opacity limit would not apply, after further review the Division has opted to include the 30% opacity requirement in the permit. This is consistent with the opacity requirements typically included for diesel fuel-fired engines.

- The opacity monitoring has been revised to require an additional opacity observation if the engine is operated for more than 250 hours in any calendar year period.

#### Emergency Fire Pump Engine

In addition, as discussed previously, there is an emergency fire pump engine that is subject to the March 3, 2010 revisions to the RICE MACT. This engine is currently included in the insignificant activity list and is considered insignificant under the provisions in Colorado Regulation No. 3, Part C, Sections II.E.3.xxx (stationary internal combustion engines). However, under the “catch-all” provisions in Regulation No. 3, Part C, Section II.E, sources that are subject to any federal or state applicable requirement, such as National Emission Standards for Hazardous Air Pollutants (NESHAPs), may not be considered insignificant activities. Since this engine is subject to RICE MACT requirements it can no longer be considered an insignificant activity. Although the unit cannot be considered an insignificant activity, since the Division has not adopted either the January 18, 2008, March 3, 2010 or August 20, 2010 revisions to the RICE MACT, all of which address area sources, the engine is still exempt from APEN reporting and minor source construction permit requirements. Therefore the emergency fire pump engine and the appropriate applicability requirements have been included in Section II.2 of the permit.

The engine description is as follows:

**John Deere, Model No. 6081AF001, Diesel Fuel-Fired Internal Combustion Engine, Serial No. RG6081A159985, rated at 182 hp, with a heat input rate of 1.28 mmBtu/hr (9.3 gal/hr based on a diesel fuel heat content of 137,000 Btu/gal).**

The appropriate applicable requirements for this engine are as follows:

- Except as provided for below, visible emissions shall not exceed 20% opacity (Reg 1, Section II.A.1)
- Visible emissions shall not exceed 30% opacity, for a period or periods aggregating more than six (6) minutes in any sixty (60) minute period, during fire building, cleaning of fire boxes, soot blowing, start-up, process modifications, or adjustment or occasional cleaning of control equipment, when burning coal (Reg 1, Section II.A.4)

Based on engineering judgment, the Division believes that the operational activities of fire building, cleaning of fire boxes and soot blowing do not apply to diesel engines. In addition, since this engine is not equipped with control equipment the operational activities of adjustment or occasional cleaning of control equipment also do not apply to this engine. Finally, based on engineering judgment, it is unlikely that process modifications will occur with this emergency engine. Therefore, for this unit the 30% opacity provision only applies during startup.

- SO<sub>2</sub> emission shall not exceed 0.8 lbs/mmBtu (Reg 1, Section VI.B.4.b.(i)).
- 40 CFR Part 63 Subpart ZZZZ requirements – management practices (oil and filter change, inspect air cleaner and inspect hoses and belts)
- 40 CFR Part 63 Subpart A requirements

Since this engine is not subject to any emission limitations, monitoring requirements, notification and reporting requirements the requirements in §§ 63.7, 63.8, 63.9 and 63.10 do not apply. In addition, since this emission unit is an existing unit the requirement in § 63.5 (preconstruction review and notification requirements) do not apply. Finally, Table 8 of Subpart ZZZZ indicates that operation and maintenance requirements in 63.6(e) do not apply. Therefore, the permit will only include the prohibition and circumvention requirements in § 63.4.

Since this unit is not subject to APEN reporting or minor source construction permit requirements, the permit will not include any requirements for calculating emissions.

### Section II.3 – Boiler

- The language in Condition 3.8 was revised to more closely match the language in the regulation. In the current permit, this condition does not include the requirement for the diluents CEMS (O<sub>2</sub> or CO<sub>2</sub>) which is specified in NSPS Subpart D § 60.48b(b)(1).
- Revised the language in Condition 3.3.2 to indicate how lb/hr emission rates are calculated.

### Section II.6 – Continuous Emission Monitoring Requirements

- Removed the statement in Condition 6 indicating that the permittee shall have 60 days following the initial permit issuance for software revisions and testing since this deadline has passed.
- Removed the phrase “and the traceability protocols of Appendix H” from Condition 6.1.1.3, since Appendix H of the current version of 40 CFR Part 75 is “reserved”. Note that this condition specifies that the continuous emission monitoring systems are subject to the requirements of 40 CFR Part 75 and that

would include any applicable appendices, regardless of whether or not they are specifically called out in this condition.

- Added language (“new” Condition 6.1.1.4) to clarify that the data acquisition and handling system (DAHS) shall be able to manipulate data in the units of all emission limitations and to require that relative accuracy test audits (RATAs) be conducted in units of all emission limitations.
- Added language to Condition 6.3 (data replacement requirements) to make it clear that replaced and bias-adjusted data are used to monitor compliance with the annual limitations.
- Revised the reporting frequency in condition 6.5 to semi-annual.

### Section III – Acid Rain Requirements

- Revised the table in Section 2 to include calendar years corresponding to the relevant permit term for the renewal.
- Minor changes were made to the standard requirements (Section 3), based on changes made to 40 CFR Part 72 § 72.9.
- Removed the sentence at the beginning of Section 4 indicating that reports will be sent to the addresses in Appendix D, since reports are submitted electronically.
- Removed the requirement in Section 4 (Reporting Requirements) to submit a copy of any revised certificate of representation to the Division. Submitting a copy of the certificate of representation to the permitting authority is not required under the regulations.

### Section IV – Permit Shield

- The table for streamlined requirements (Section IV.3) was corrected to address NSPS Db requirements related to the auxiliary boiler, as follows:
  - Corrected the citation for the NSPS Db NO<sub>x</sub> limit (60.44b(a)(1)) and included 63.44b(h) and (i), which describe the NSPS Db NO<sub>x</sub> limit.
  - Corrected the description for the 60.44b(e)(2). This requirement is not the NO<sub>x</sub> emissions limitation but specifies the span value requirement for the NO<sub>x</sub> CEMS, not the NO<sub>x</sub> limit).
  - Corrected the description for 60.44b(g), (h) and (i). These requirements are related to recordkeeping and reporting under NSPS Db, not the NO<sub>x</sub> span value. In addition, included 60.49b(v) and (w) with these requirements as they are all related to reporting.

## Section V – General Conditions

- Added a version date to the General Conditions.
- May 24, 2012 revision: The paragraph in Condition 3.d indicating that the requirements are state-only has been removed, since EPA approved these provisions into Colorado's SIP effective October 6, 2008.
- The title for Condition 6 was changed from "Emission Standards for Asbestos" to "Emission Controls for Asbestos" and in the text the phrase "emission standards for asbestos" was changed to "asbestos control".
- General Condition 29 was revised by reformatting and adding the provisions in Reg 7, Section III.C as paragraph e.

## Appendices

- As discussed previously, the diesel fire pump was removed from the insignificant activity list in Appendix A and is included in Section II of the permit.
- Based on an e-mail received from the source during the public comment period, a Hotsy portable pressure washer was added to the insignificant activity list in Appendix A.
- Changed the name of the Division contact for reports.

### Rocky Mountain Energy Center Potential HAP Emissions (tons/yr)

Emission Unit	acetaldehyde	acrolein	benzene	1,3 butadiene	ethylbenzene	formaldehyde	hexane	naphthalene	PAHs	Chloroform	propylene oxide	toluene	xylene	zinc	total
Turbines/ HRSGs <sup>1</sup>	2.23	0.31	0.22	2.07E-03	0.29	2.44	4.22	2.71E-02	1.08E-02		0.78	1.16	0.43		12.11
auxiliary boiler <sup>2</sup>	1.04E-04	9.28E-05	1.97E-04		2.32E-04	4.17E-04	1.51E-04	3.80E-05	1.16E-05			9.04E-04	6.72E-04		2.82E-03
emergency water pump <sup>3</sup>	7.98E-06	2.46E-06	4.44E-04			1.17E-04	3.20E-06	3.68E-05				1.40E-04	4.83E-05	5.15E-05	8.51E-04
emergency generator <sup>3</sup>	7.74E-05	2.39E-05	4.30E-03			1.14E-03	3.10E-05	3.57E-04				1.36E-03	4.68E-04	5.00E-04	8.26E-03
cooling tower <sup>4</sup>										0.89					0.89
Total	2.23	0.31	0.22	2.07E-03	0.29	2.44	4.22	2.75E-02	1.08E-02	0.89	0.78	1.16	0.43	5.52E-04	13.01

<sup>1</sup>Per application, emission factors from air toxics are from Ventura County APCD and CATEF databases. The formaldehyde emission factors are from the 2004 performance test, emissions are based on the unit with higher emissions burning 8760 and the other for the remainder of the time.

<sup>2</sup>Per application, HAP emission factors from Ventura county APCD

<sup>3</sup>Per application, HAP emission factors from CATEF (diesel engines < 13 % O<sub>2</sub>) and Ventura county APCD (metals), based on 500 hrs/yr for both the fires pump and emergency generator (per September 6, 1995 EPA Memo, "Calculating Potential to Emit (PTE) for Emergency Generators"). Although the Sept 1995 memo addresses emergency generators only, the Division considers the memo is appropriate to use for emergency fire pump engines.

<sup>4</sup>chloroform emission factor from "Locating and Estimating Air Emissions from Sources of Chloroform", EPA-450/4-84-007c, March 1984 for recirculating units